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Attorney Docket No. 56728-P002US-10005779
Date June 6 , 2000

From

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PATENT APPLICATION TRANSMITTAL LETTER

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Date of Deposit: June 6, 2000

Box PATENT APPLICATION
Assistant Commissioner
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Washington, D.C. 20231

I hereby certify that this is being deposited with the United States Postal Service Express "Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231

By: Gail L. Miller

Printed/Typed Name: Gail L. Miller

Sir:

Transmitted herewith for filing under 37 C.F.R. 1.53(b) is a(n):

☒ Utility

☒ Original patent application,

Inventor(s): **Mohammad Husain; Manish Desai**

For: **SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES**

Enclosed are:

1. ☒ 36 pages of written description, claims and abstract.
2. ☒ 2 sheets of drawings.
3. ☒ Combined Declaration and Power of Attorney.
   (a) ☒ Newly executed (original or copy)
   (b) ☐ Copy from prior application (37 CFR 1.63(d)) ***(for continuation/divisional if Box 5 completed)***

[Note Box 5 below]

4. ☐ Incorporation by Reference *(useable if Box (b) is checked).*

   The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 3(b), is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

5. ☐ **If a CONTINUING APPLICATION,** *check appropriate box and supply the requisite information:*
   ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application Serial No:
6. ☐ Assignment Papers (cover sheet and document(s)) of the invention to
7. ☒ A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.
8. ☐ Information Disclosure Statement and Form PTO-1449. ☐ Copies of IDS Citations.
9. ☐ Preliminary Amendment

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10. ☒ Return Receipt Postcard (MPEP 503) *(should be specifically itemized)*

11. □ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*

12. □ Other: ______________________________

13. **Utility Fee Calculation**

CLAIMS	(1) FOR	(2) NUMBER FILED		(3)NUMBER EXTRA	(4) RATE			(5) CALCULATIONS
	TOTAL CLAIMS (37 C F R § 1 16(c) or (j))	55	- 20 =	35	X	$ 18	=	630.00
	INDEPENDENT CLAIMS (37 C F R § 1 16(b) or (i))	5	- 3 =	2	X	$ 78	=	156.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 C.F.R. § 1.16(d))				+		=	
					Basic Fee			690.00
					Total of above Calculations =			1,476.00
	Reduction by 50% for filing by small entity (Note 37 C.F.R. §§ 1.9, 1.27 & 1.28)							
	* *Reissue claims in excess of 20 and over original patent* ** *Reissue independent claims over original patent*				TOTAL =			738.00

Method of Fee Payment

14. ☒ Two checks totaling $738.00 to cover the filing fee are enclosed.

15. □ A check in the amount of $40.00 to cover the assignment recordal fee is enclosed.

16. □ Please charge my Deposit Account No. 06-2380 in the total amount of the filing fee and the assignment recordation fee, if any. **A duplicate of this Transmittal Letter is enclosed, if box checked.**

17. ☒ The Commissioner is hereby authorized to charge any deficiency in the enclosed fees under 37 C.F.R. §1.16, or to charge any patent application processing fees under 37 C.F.R. §1.17, or credit any overpayment, to Fulbright & Jaworski L.L.P. Deposit Account No. 06-2380.

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Respectfully submitted,

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PATENT

Attorney's Docket No. **56728-P002US-10005779**

Applicant or Patentee: **Mohammad Husain; Manish Desai**

Serial or Patent No.:

Filed or Issued:

For: **SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES**

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(b))—INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES

described in

☒ the specification filed herewith.

□ application serial no. 0 / ________________, filed ______________________________.

□ patent no. _______________, issued ____.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e)

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

□ no such person, concern or organization

☒ persons, concerns or organizations listed below:

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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Inventor: Mohammad Husain	Name of Inventor: Manish Desai
Mohammad Husain	Manish Desai
Signature of Inventor	Signature of Inventor
6/3/00	6/3/2000
Date	Date

SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES

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RELATED APPLICATIONS

The present application is related to concurrently filed, commonly assigned and copending U.S. Patent Application [Attorney Docket No. 056728-P001US-10001505], entitled "A System and Method for Secure Provisioning and Configuration Of A Transaction Processing Device", the disclosure of which application is incorporated herein by reference.

TECHNICAL FIELD

The present invention relates generally to a system and method for secure setup and management of transaction processing devices and in particular to a system and method for secure electronic authentication of a subscriber account for a network service, such as a payments processing service.

BACKGROUND

Existing credit and debit card processing systems utilize a card processing terminal, typically associated with a host computer, which is connected to a private network for credit and/or debit card processing. A consumer desiring to make payments for goods or services purchased at a merchant location would typically present his/her credit or debit card to a representative of the merchant at the check out counter. The representative at the check out counter would swipe the card across a card reader which is typically attached to or part of the card processing terminal. Once the card is swiped, information associated with the transaction is transmitted via a private network maintained by private network operators, such as First Data Corp., to a server associated with the private network. The private network server in turn sends information associated with the transaction to a server associated with the bank issuing the card and the bank which processes the electronic authorization of the payments for the merchant (the payment processor), again through a private network maintained by the private network operator. The payment processor then sends back authorization for charging the card to the server maintained by the private network operator, which in turn sends the authorization to the merchant location.

Typically a payment processor, such as a bank or other payment acceptance provider, in order to allow a subscriber, such as a merchant, to open an account such as a merchant account with the payment processor so that the merchant may provide a network service, such as a payment processing service, to its customer would collect an application from the merchant. The application is typically received by the payment processor by fax, regular mail, via an interview between a representative of the payments processor and the subscriber, or via a web page on the internet.

Once information about the subscriber is collected, the payment processor performs due diligence on the information. The information collected is used to verify the validity, the legitimacy and/or the worthiness of the business, the subscriber applying for the account on behalf of the business and/or the personal guarantor of the subscriber. Such information may include personal, credit and/or historical information of the subscriber and/or personal guarantor, credit and/or historical information about the business entity, financial history and tax information, business location and site information, marketing methods, products and services descriptions, means of delivery of the products/services, point-of-transaction information, projected processing volumes and/or the like.

The authentication of the signor of the application or the subscriber is typically performed by physical verification where the signor of the application presents or supplies identifying information to a representative of the payment processor. The identifying information may also be provided directly to the payment processor where the subscriber photocopies an identification card, such as a driver's license or a birth certificate and provides it to the payment processor for identification. However, for applications received over the internet, there is no direct authentication of the subscriber. The site location of the merchant is typically authenticated by using third party site assessment companies visit the physical site of the business and taking pictures.

Once the legitimacy of the business entity is verified and the business or personal guarantor's credit is cleared for providing the business with a subscriber account, a transaction processing device, such as a point-of-sale electronic terminal is distributed to the subscriber. The subscriber may also have older terminals and/or software. In any case, the terminals used by the subscribers are programmed for servicing the new payments processing service. Programming of the terminals is desirable to provide receipt related data to the terminal. Such data may include subscriber identifying information, such as name of the merchant, address of the merchant, phone number of the merchant, logo of the merchant, and/or the like.

The process for distributing and/or programming the terminals is currently performed in one of the following three methods. In the first method, the terminal may be programmed at the location of the payment processor or at the location of a third party authorized by the payment processor. Once the terminal is programmed, the preprogramed terminal is distributed to the merchant through regular mail.

In the second method, the terminal is distributed to a field representative or a contracted representative of the payment processor. The representative of the payment processor delivers the terminal to the merchant and the terminal is programmed at the business location of the merchant by the representative of the payment processor.

In the third method, the terminal is distributed to the merchant by regular mail. The received terminal may then be remotely configured via private communication lines. Typically during the configuration, the merchant is guided through the setup process by a representative of the payment processor. Some portion of the configuration information may be remotely downloaded. Because the terminal is configured via private communication lines there is no need to provide any extra security to the information transmitted or received.

Existing systems for receiving an application for a subscriber account, performing due diligence on the application, programming and/or distributing a terminal to the merchants have several drawbacks. Such systems do not provide electronic means for verifying the identity of the individual from whom the information was actually collected. For example, when a merchant applies for a merchant account over the internet, the authentication of the person applying over the internet cannot be performed electronically. Moreover, existing systems and methods are not capable of electronically verifying that the person using the terminal is an authorized user of the terminal.

Additionally, each of the processes for distributing and/or programming the terminals described above has drawbacks. For example, each of the methods described above requires a representative of the payment processor to provide instructions to and authenticate the subscriber applying for the subscriber account and/or to program the terminal. This adds to the cost of the payment processor to provide a subscriber account to the subscriber.

Moreover, once the terminal is mailed to the subscriber, there is no way of verifying that an authorized individual is actually using or setting up the terminal at the merchant location for a legitimate business purpose. Thus, there is no way to verify that an unauthorized individual or business is not currently using the terminal and the merchant account. This causes problems especially in a payment processing system where the individual using the terminal and/or merchant account acquires access to credit card numbers of consumers by virtue of possessing the terminal. Thus, an unauthorized user of the terminal could get funds deposited to his/her bank account even though he has provided no goods or services. For example, a person with malicious intent could access the web page of the payment processor in order to apply for a merchant account. The person could provide stolen identifying information, such as someone else's name and business information to the payment processor. The only information provided to the payment processor that would correspond with information of the unauthorized person would be his/her banking information.

Upon receiving the information, the payment processor would perform physical due diligence on the business and the principal of the business. Because the due diligence is performed on an existing individual with a viable business, the due diligence would not alert the payment processor as to any discrepancy in the provided information. Thus, the payment processor could preprogram the terminal and provide it to the address provided for delivery. Or, the payment processor could inadvertently help the unauthorized user set up an existing terminal to access the processing service. In any case, once the unauthorized individual receives the terminal or reconfigures an existing terminal he/she could start processing credit cards without the payment processor being aware for a period of time that the terminal is under the control of an unauthorized individual.

Therefore, there is a need in the art for a system and method for secure electronic authentication of a subscriber, such as a merchant requesting a subscriber account to provide services over a private network or a public network, such as the internet.

SUMMARY OF THE INVENTION

These and other objects, features and technical advantages are achieved by a system and method for electronically authenticating a subscriber requesting a subscriber account for providing a network service.

In the preferred embodiment, a subscriber account provider receives initial information from a subscriber. The received information is stored by the subscriber account provider. A transaction processing device is provided to the subscriber and the subscriber is electronically authenticated prior to enabling the subscriber account for performing the network service. In the preferred embodiment, the step of electronically authenticating the subscriber comprises receiving captured information from subscriber through said transaction processing device. After receiving the captured information the subscriber account provider utilizes the captured information to receive verifying information about the subscriber; and then compares the verifying information with the initial information to authenticate the subscriber.

In an alternative embodiment, a transaction processing device is provided to said subscriber. The subscriber utilizes the transaction processing device to provide initial information to a provider of the subscriber account. The provider of the subscriber account stores the received information in a database. The subscriber then provides additional information to the provider of the subscriber account through the transaction processing device. The provider then utilizes the additional information to receive verifying information about the subscriber. The verifying information is then compared to the initial information provided by the subscriber in order to authenticate the subscriber. The subscriber account is activated upon completion of the authentication of the subscriber.

According it is a technical advantage of a preferred embodiment of the present invention that a user of a transaction processing device can be electronically authenticated.

It is another technical advantage of a preferred embodiment of the present invention to provide independent verification of information provided by a subscriber.

It is yet another technical advantage of a preferred embodiment of the present invention to provide a retail channel of distribution for point-of-sale terminals.

It is still another technical advantage of a preferred embodiment of the present invention that a point-of-sale terminal can be verified.

The foregoing has outlined rather broadly the features and technical advantages of the present invention in order that the detailed description of the invention that follows may be better understood. Additional features and advantages of the invention will be described hereinafter which form the subject of the claims of the invention. It should be appreciated by those skilled in the art that the conception and specific embodiment disclosed may be readily utilized as a basis for modifying or designing other structures for carrying out the same purposes of the present invention. It should also be realized by those skilled in the art that such equivalent constructions do not depart from the spirit and scope of the invention as set forth in the appended claims. The novel features which are believed to be characteristic of the invention, both as to its organization and method of operation, together with further objects and advantages will be better understood from the following description when considered in connection with the accompanying figures. It is to be expressly understood, however, that each of the figures is provided for the purpose of illustration and description only and is not intended as a definition of the limits of the present invention.

BRIEF DESCRIPTION OF THE DRAWING

For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawing, in which:

FIGURE 1 shows a preferred embodiment flowchart for activating a subscriber account;

FIGURE 2 shows a pictorial representation of a transaction processing device of the preferred embodiment;

FIGURE 3 shows a schematic of a preferred embodiment network for activating the subscriber account;

FIGURE 4 shows a flowchart for activating the subscriber account in an alternative embodiment; and

FIGURE 5 shows a flowchart for activating the subscriber account in another alternative embodiment.

DETAILED DESCRIPTION

FIGURE 1 shows a preferred embodiment flowchart 10 for activating a subscriber account for an individual or entity, such as a small office/home office (SOHO) type business, a large business or other provider of goods and/or services, desiring to provide a network service, such as a payment processing service, to its customer. The payment processing service provided may be for example, credit card processing, debit card processing, check verification, check guarantee, payroll processing, gift certificate issuance, issuance of electronic tickets, issuance of money order and/or other like services.

In the preferred embodiment, in step 11, the subscriber applies for a subscriber account with a provider of a subscriber account, such as a payment processor, for example a bank or other payment acceptance provider. The application preferably includes information about the individual applying for the subscriber account, information about the business entity, if any, on behalf of whom the application is being made, information about other individuals authorized to act on behalf of the business entity or the individual and/or the like. Such information may include for example, contact information about the authorized individuals and/or the business entity, if any, such as phone numbers, fax numbers, electronic addresses, for example email address, credit, tax and/or historical information about the business entity, financial history and/or tax information about the principal of the business, information about location of the business, marketing methods, products and/or services descriptions, means for delivering the products/services, projected processing volumes, and/or the like.

The application may be provided to the payment processor by any means. In the preferred embodiment, the subscriber accesses the payment processor's web site and applies for the subscriber account via the internet. The web site may be accessed by using a conventional processor based system such as a personal computer, or a wireless device, such as a cellular phone, a personal digital assistant, a palm pilot and/or the like. If desired, the subscriber may access the web site through a stand alone internet enabled device.

In alternative embodiments, the subscriber may apply for the account over the phone by talking to a representative of the payment processor, by responding to predetermined queries, and/or by interacting with an interactive voice recognition unit. The subscriber may also provide the desired information to the payment processor by talking to a representative of the payment processor in person, or by filling out an application form and sending it to the payment processor.

Upon receiving the application, in step 12 the payment processor performs due diligence on the received application. The physical location of the business is verified preferably by using third party site assessment companies visit the physical site of the business and taking pictures. Additionally or in the alternative, the location of the business may be verified by receiving and verifying the location lease information, the tax records of the business, the mortgage information, and/or the like.

Once the legitimacy of the business entity is verified and the business or personal guarantor's credit is cleared for providing the business with a subscriber account, in step 13 a transaction processing device, such as a point-of-sale electronic terminal, and/or associated software, is provided to the subscriber. The transaction processing device of the preferred embodiment is an internet enabled device as shown and described in the above referenced U.S. Patent Application entitled "A Standalone Internet Enabled Transaction Processing Device", the disclosure of which is incorporated herein by reference.

FIGURE 2 shows a pictorial representation of a transaction processing device 20 of the preferred embodiment. As shown in FIGURE 2, transaction processing device 20 includes a display screen 21, keypad 22 and card reader 23. The display screen may be an LCD display, a touch screen, or the like. Display 21 may be used for various purposes, such as prompting a subscriber to enter information, displaying instruction for performing various activities, displaying the progress of a transaction, asking challenge questions and/or other information. This is especially useful when a subscriber is applying for a subscriber account to provide a network service and/or activating the subscriber account. The information displayed on the display screen may be interactive. For example, by using keypad 22 and/or the display screen 21, the subscriber can respond to specific queries in order to authenticate itself. Thus, the subscriber can be electronically authenticated to ensure that the person activating the subscriber account is authorized to activate the account.

The transaction processing device may be provided to the subscriber by mail. Thus, the payment processor may mail the transaction processing device to the subscriber preferably at the address provided by the subscriber at the time for applying for the subscriber account. In an alternative embodiment the transaction processing device may be provided to a representative of the payment processor who may then deliver the device to the subscriber. Furthermore, if desired, the transaction processing device may be available to be purchased at retail locations. Thus, upon completion of due diligence on the application by the payment processor, the subscriber may be instructed to purchase the transaction processing device from any of the retail locations. In the preferred embodiment, the transaction processing device is not enabled for immediate use when provided to the subscriber.

Moreover, upon the completion of due diligence, an identifying token, such as a username and a password, may also be provided to the subscriber either electronically or physically. The identifying token is preferably provided to the subscriber separate from the transaction processing device to provide added security. For example, where the subscriber has provided an email address, the user name and password may be provided to the subscriber via email or the identifying token may be provided to the subscriber over the phone or through the mail. In cases, where both the transaction processing device and the identifying token are mailed to the subscriber, it is preferable to provide these via separate communications in order to provide an added layer of security. If both the transaction processing device and the identifying token are provided to the subscriber by the same communication and the communication falls into the hands of an unauthorized individual, the received device and identifying token may be misused by the unauthorized individual as the unauthorized individual would have both the device and the identifying token.

If desired, the identifying token may be provided to the subscriber at the time of applying for the account. This is especially useful in situations where the subscriber applies for the account over the internet at the web site of the payment processor. Thus, the subscriber may select its own user name and password at the time of applying for the account, if desired. In the alternative, the identifying token may be generated by the payment processor.

The subscriber may additionally or alternatively be provided with a physical device with the identifying information encoded in at least a portion of the device. Such a device may be a card, such as a card with a magnetic stripe or a bar code, a chip, such as a nano chip embedded in a card or other electronic device.

Upon receiving the electronic terminal and/or the associated software, the subscriber would preferably authenticate itself to the payment processor prior to activation of the subscriber account for providing a network service. This is because it is desirable to ensure that the person utilizing the transaction processing device is an authorized individual as specified in the application for the subscriber account.

In the preferred embodiment, the authentication of the subscriber is performed electronically utilizing a public communications network, such as the internet. Preferably the preferred embodiment internet enabled transaction processing device discussed above is also utilized for the authentication process. Thus, in step 14 the subscriber or one of the other authorized individuals as specified in the application provides identifying information to the payment processor. The identifying information provided by the subscriber is captured by the transaction processing device before being provided to the payment processor.

In the preferred embodiment, the identifying information provided by the subscriber to the payment processor is information originally provided to the subscriber by a third party, i.e. an entity other than the payment processor, such as a certifying authority. For example, such identifying information may be the subscriber's driver's license number, the subscriber's credit card number, the subscriber's debit card number, the subscriber's smart card number, and/or the like. Identifying information may also include other information, such as biometric data, for example, fingerprint information, thumb print information, retina information, CCD image of the face of the subscriber in addition to or in place of the above mentioned third party provided information. Moreover, the signature of the subscriber may also be used.

In alternative embodiments, the information provided to the transaction processing device may be electronic wallet information, such as a cryptographic information based data such as SET certificates used for authenticating electronic purchases or transaction, cryptographic token issued by a governmental authority, a token contained in a smart card and/or the like.

Moreover, it is desirable that the identifying information provided to the payment processor by the subscriber in step 14 is information that has not been previously provided to the payment processor directly by the subscriber. For example, if the identifying information provided by the subscriber during the authentication process is the subscriber's driver's license number, it is desirable that this information was not previously provided to the payment processor by the subscriber. However, it is conceivable that the payment processor may have independently gathered such identifying information about the subscriber. For example, during due diligence the payment processor may have gathered information about the subscriber's credit card number from the subscriber's credit history report.

The identifying information is preferably captured by the preferred embodiment transaction processing device, such as device 20 shown in FIGURE 2. The information may be provided to the transaction processing device by scanning or swiping the subscriber's driver's license, credit card, smart card, debit card, electronic benefits card and/or the like through a card reader, such as a magnetic stripe reader, smart card reader or other devices capable of reading such information. Such a card reader is preferably part of the transaction processing device of the preferred embodiment. In an alternative embodiment, such a card reader could be associated with the preferred embodiment transaction processing device.

When the information provided is or includes biometric information the information may be captured by a finger print reader, a retina scanner or other device capable of accepting such information. The subscriber may also use an electronic pen, for example a stylus to provide an identifying signature on the display associated with the device 20. The signature may be electronically captured.

The advantage of providing the identifying information to the transaction processing device by directly scanning or swiping the card is that it provides added security indicating that the person swiping the card is in possession of the card and is most likely an authorized user of the card. Moreover, it is difficult to manufacture fake cards that include magnetic stripes or other encoded information. Thus, by scanning or swiping the card directly an added layer of security is provided to the authentication process. If desired, however, in alternative embodiments, information from such cards may be provided to the transaction processing device by using key pad 22. The fact that the information is entered using the key pad also indicates that the person entering the information is in possession of the information and is most likely an authorized user of the card.

In alternative embodiments, information provided by the payment processor to the subscriber, such as the above mentioned identifying token, may be provided to the transaction processing device in addition to or in place of the above mentioned third party provided identifying information, by entering the same using the key pad 22 or the display screen 21. In cases where the payment processor has provided the subscriber with a physical device with the identifying token encoded in at least a portion of the device, the identifying token may be captured by the transaction processing device by a magnetic stripe reader, smart card reader, or other device depending on the type of physical device provided by the payment processor to the subscriber.

FIGURE 3 shows a schematic of a preferred embodiment network for activating the subscriber account. Transaction processing device 31 is connected to a remote server 32 via a communication network. The remote server is preferably a server maintained by the subscriber account provider, such as the payment processor. The remote server 32 is shown connected to a third party server 33, such as the server of a certifying authority, the server of a bank issuing a credit card, an ATM card, or a debit card, via communications network 35.

In step 14 (FIGURE 1), the information captured by the transaction processing device 31 is provided to the subscriber account provider server 32, wherein the remote server is preferably under the control of the payment processor. In the preferred embodiment, the captured information is transmitted securely to the remote server through communication network 34, such as a public network, for example a network capable of TCP/IP communications, such as the internet. In an alternative embodiment, communication network 34 may be a private network, such as existing credit card processing networks currently being used at retail locations in conjunction with point of sale (POS) terminals, such as credit or debit card processing terminals.

In the preferred embodiment, the transaction processing terminal is equipped with identifying information unique to the particular transaction processing terminal, such as a private key and public key pair. At least part of the information captured by the transaction processing device is encrypted. The encryption may be performed by the cryptographic services associated with the transaction processing device 31. The cryptographic service may include asymmetric key cryptography, symmetric key cryptography, sequence generator cryptography, and/or the like. For example, the terminal could encrypt a portion of the captured data (or the entire captured data) using the private key of the device. If desired, the information could be further encrypted utilizing the public key of the payment processor. The encrypted information is preferably sent via communication network 34 to the provider server 32. Encryption of the data before transmission is especially useful when communication network 34 is a public network which is not inherently secure.

In the preferred embodiment, the payment processor is able to verify the terminal, the subscriber and also verify that the received information was intended for the payment processor. By decrypting the received data by utilizing the private key of the payment processor, the payment processor can verify that the data was intended for the payment processor. Additionally or in the alternative, by using the public key of the terminal of the subscriber, the payment processor is able to verify that the received data came from the particular transaction processing terminal. Thus, if the payment processor is unable to verify that the received data originated from a terminal that was initially provided to the subscriber either directly by the payment processor or indirectly through a representative of the payment processor or a retail location, then the payment processor would not enable the subscriber account for use.

In step 15, the payment processor verifies the identifying information received from the subscriber. In the preferred embodiment, the payment processor provides at least a portion of the received information to third party server 33, such as a server maintained by a certifying authority, for example, the government, via communication network 35. Thus, for example, if the identifying information initially captured by the transaction processing terminal and provided to the payment processor is a driver's license number of an authorized individual or a credit card number of the business entity or an authorized individual, that number could be sent to the certifying authority. Utilizing the identifying information, the certifying authority would provide verifying information associated with the identifying information to the payment processor. The verifying information could be for example, the name, address, social security number, and/or other like information associated with the driver's license number or credit card number. Upon receiving the verifying information from the third party server, the payment processor could either manually or electronically compare the verifying information (i.e. information received from the third party server) with information initially provided by the subscriber, such as in the above described step 11.

An additional layer of verification may be provided by requesting the subscriber to respond to challenge questions, such as mother's maiden name, zip code of the subscriber, or proprietary information about the business entity, if any, on behalf of which the individual is acting. The response to the challenge questions may be utilized to verify the subscriber. Thus, for example, if the identifying information initially captured by the transaction processing terminal and provided to the payment processor is a credit card number, the individual could be asked to provide his/her zip code or other information. The provided information could be captured by the transaction processing terminal and transmitted to the payment processor. The payment processor may then verify the response to the challenge question for example, from the card issuing bank.

In alternative embodiments, the response to the challenge questions captured by the transaction processing device may serve as the identifying information of step 15. Thus, for example, if the identifying information initially captured by the transaction processing terminal and provided to the payment processor is the individual's mother's maiden name that information could be sent to a third party for independent verification of the mother's maiden name. Alternatively, if the payment processor has already gathered that information either from the individual or independently of the individual, the payment processor may verify that the received identifying information corresponds with the identifying information already gathered by the payment processor.

The verifying step 15 of the preferred embodiment as described above is especially useful in situations where the identifying information provided to the payment processor by the subscriber comprises information which was already in the possession of the subscriber when the subscriber initially applied for the subscriber account. For example, the subscriber's driver's license number, the subscriber's credit card number and/or the like. Moreover, the verifying step 15 of the preferred embodiment as described above is also especially useful in situations where the identifying information provided to the payment processor by the subscriber comprises information which was initially provided to the subscriber by a third party other than the payment processor as it provides independent verification (i.e. verification by someone other than the payment processor) that the individual setting up the terminal is authorized to set up the terminal, such as an individual who owns the business or an authorized representative.

In situations where the identifying information provided to the payment processor by the subscriber during step 14 is an identifying token, such as a username and/or password, initially provided to the subscriber by the payment processor, the payment processor need not utilize a third party server to verify the subscriber. In such a case, the payment processor itself may verify that the received username and password corresponds with the username and password for the terminal and the particular subscriber.

Moreover, in situations where the payment processor has previously gathered information about the subscriber independently of the subscriber, the payment processor need not utilize a third party server to verify the subscriber. In such a case, the payment processor may verify that the received identifying information corresponds with the identifying information independently gathered by the payment processor. For example, upon receiving an application for a subscriber account, the payment processor may independently have gathered information about the subscriber's driver's license number and the address associated with it. The payment processor may store the gathered information in a database associated with the payment processor server. By comparing portions of the identifying information, such as driver's license number, provided by the subscriber with the driver's license number stored in the database associated with the payment processor server, the payment processor may verify that the received driver's license number corresponds with the driver's license number provided by the subscriber.

Furthermore, in certain situations in order to verify that an authorized individual is setting up the terminal, the payment processor may verify the identifying information both by utilizing a third party and independently verifying the received information. For example, the payment processor may verify that the received driver's license number corresponds with the information provided by the subscriber by contacting a third party.

Moreover, certain types of identifying information are self authenticating. For example, a smart card may include an encrypted packet that can be verified offline. In such a case, a well known certifying authority's public key can be used to verify that a certificate on the smart card was signed by the certifying authority's private key. Once the certificate is verified, the encrypted packet may be extracted and decrypted.

In the preferred embodiment, upon successful verification that the individual setting up the terminal is an authorized individual, in step 16 the payment processor activates the subscriber account for network services. In the preferred embodiment, no data is transmitted back to the transaction processing device to activate the subscriber account. Activation is performed simply by associating the subscriber account with the particular transaction processing terminal and enabling the subscriber account. Once the subscriber account is activated, any information, such as transaction information involving the sale of goods and/or services to a customer, received from the particular terminal will be associated with the particular subscriber account.

In an alternative embodiment, in order to activate the subscriber account, the payment processor transmits data back to the terminal, preferably via communication network 34. In the preferred embodiment, the data transmitted back to the terminal from the payment processor is encrypted such that only the intended terminal can read the data. Preferably, the data transmitted back is configuration information. Such configuration information may include, for example, the name, address, phone number of the business entity, if any, account information, name of person setting up the terminal, the date and time the account was activated, alternate phone numbers or access numbers for subsequent access to a public network, alternate phone numbers or access numbers for subsequent access to a private network, and/or other like information. The information sent back to the terminal may be stored in the terminal and used, for example to print receipts or other documents.

The configuration information may also be used to remotely configure the transaction processing device. For example, if the subscriber desires to change the information, such as address, slogan, and/or the like, appearing on receipts provided to customers, the subscriber may access the payment processor's web site and change the configuration information related to one or more of the transaction processing devices. The payment processor may then securely transmit the configuration information to the transaction processing device. Thus, the subscriber does not have to manually change the configuration information on the device itself. this process is described in detail in the above referenced U.S. Patent Application, entitled "A System and Method for Secure Provisioning and Configuration Of A Transactions Processing Device", the disclosure of which is hereby incorporated herein by reference.

FIGURE 4 shows a flowchart 40 for activating the subscriber account in an alternative embodiment. The implementation of the individual steps of the alternative embodiment of FIGURE 4 is substantially the same as the corresponding steps of the preferred embodiment as discussed in detail above with reference to FIGURE 1. As such the individual steps of FIGURE 4 will not be discussed in great detail.

However, in the implementation of FIGURE 4, the order of the steps is different from that of FIGURE 1. In the embodiment of FIGURE 4, in step 41 the transaction processing device is provided to the subscriber. The transaction processing device may be purchased by the subscriber at a retail location or be shipped to the subscriber by the payment processor or a representative of the payment processor.

Upon receiving the transaction processing device, in step 42 the subscriber applies for a subscriber account with the payment processor. In addition to the methods discussed with regard to FIGURE 1, the subscriber may apply for the subscriber account utilizing the transaction processing device obtained in step 41. Thus, by utilizing the display 21, the keypad 22, and/or the card reader 23, the subscriber may enter the desired information and securely transmit it to the payment processor over a communication network.

Upon receiving the application, in step 43 the payment processor performs due diligence on the received application. The identifying token, if any, may be provided to the subscriber upon completion of due diligence or it may be provided to the subscriber with the transaction processing device in step 41. Steps 44, 45, and 46 of FIGURE 4 correspond to steps 14, 15 and 16 respectively of FIGURE 1 and will not be discussed further.

An additional advantage of the alternative embodiment of FIGURE 4 for activating a subscriber account is that a subscriber can purchase the transaction processing terminal at a retail location and then complete an application for a subscriber account, say at a web site of the payment processor. Moreover, a subscriber can acquire a used transaction processing terminal and then complete an application for a subscriber account thereby resulting in cost savings to the subscriber.

FIGURE 5 shows a flowchart 50 for activating the subscriber account in another alternative embodiment. The implementation of the individual steps of the alternative embodiment of FIGURE 5 is substantially the same as the corresponding steps of the preferred embodiment as discussed in detail above with reference to FIGURE 1 and the alternative embodiment as discussed above with reference to FIGURE 4. As such the individual steps of FIGURE 5 will not be discussed in great detail. Steps 51, 52, 53, 54, and 55 of FIGURE 5 correspond to steps 41, 42, 44, 45, and 46 of FIGURE 4 and will not be discussed further.

The order of the steps in the implementation of FIGURE 5 is the same as the order of the steps in the implementation of FIGURE 4. However, in the implementation of FIGURE 5, the step of performing due diligence (step 43 of FIGURE 4) is not included. An advantage of the alternative embodiment of FIGURE 5 is that a subscriber with an existing account can add terminals at the same or different location as an existing terminal.

An advantage of the preferred embodiment system and method is that the transaction processing device could be shipped without associating them to specific customers even if that information is already available thereby eliminating the burden of closely tracking and accounting for every terminal during all stages of the manufacturing and distribution process. In the preferred embodiment, the transaction processing device will be rendered unusable until the association to a merchant account is done during installation.

The preferred embodiment system and method allows distribution of the terminals via traditional retail channels to allow customers to receive or purchase the terminals even if they have not yet acquired a merchant account. The terminals can then be securely associated with a merchant account.

Although the present invention and its advantages have been described in detail, it should be understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention as defined by the appended claims. Moreover, the scope of the present application is not intended to be limited to the particular embodiments of the process, machine, manufacture, composition of matter, means, methods and steps described in the specification. As one of ordinary skill in the art will readily appreciate from the disclosure of the present invention, processes, machines, manufacture, compositions of matter, means, methods, or steps, presently existing or later to be developed that perform substantially the same function or achieve substantially the same result as the corresponding embodiments described herein may be utilized according to the present invention. Accordingly, the appended claims are intended to include within their scope such processes, machines, manufacture, compositions of matter, means, methods, or steps.

WHAT IS CLAIMED IS:

1. A method for activating a subscriber account for providing a network service, comprising the steps of:

receiving initial information from a subscriber;

storing said received information;

providing a transaction processing device to said subscriber;

receiving captured information from said subscriber through said transaction processing device;

utilizing said captured information to receive verifying information about said subscriber; and

comparing said verifying information with said initial information to authenticate said subscriber.

2. The method of claim 1, wherein said captured information is information provided to said subscriber by a third party certifying authority.

3. The method of claim 1, wherein said initial information is received by a provider of said subscriber account.

4. The method of claim 3, wherein said captured information is information that has not been previously provided to said provider of said subscriber account by said subscriber.

5. The method of claim 3, wherein said receiving captured information step includes the step of:

receiving by said transaction processing device identifying information from said subscriber, wherein said identifying information is captured by said transaction processing device.

6. The method of claim 5, wherein said receiving captured information step further includes the step of:

receiving securely from said transaction processing device said captured information by a remote server associated with said provider of said subscriber account.

7. The method of claim 6, wherein at least a portion of said captured information is encrypted prior to being transmitted to said remote server over a communication network.

8. The method of claim 7, wherein said encryption is performed utilizing a private key unique to said transaction processing device.

9. The method of claim 8, wherein said captured information is further encrypted utilizing a public key of said subscriber account provider.

10. The method of claim 7, wherein said encryption is performed utilizing a public key of said subscriber account provider.

11. The method of claim 8, wherein said communications network is a public network.

12. The method of claim 11, wherein said public network is capable of TCP/IP communication.

13. The method of claim 8, wherein said utilizing said captured information step comprises the steps of:

decrypting said received captured information by said subscriber account provider utilizing a public key of said transaction processing device in order to verify the source of said received captured information.

14. The method of claim 13, wherein said received captured information is further decrypted utilizing the private key of the payment processor.

15. The method of claim 13, further comprising the step of:

providing at least a portion of said decrypted information to a third party server; and

receiving said verifying information from said third party server in response to providing said decrypted information to said third party server.

16. The method of claim 13, further comprising the step of:

retrieving, by said subscriber account provider, verifying information from said remote server, wherein said verifying information had been previously retrieved by said subscriber account provider from a third party server.

17. The method of claim 5, wherein said identifying information is received by said transaction processing device by scanning a card across a card reader associated with said transaction processing device.

18. The method of claim 17, wherein said card reader is part of said transaction processing device.

19. The method of claim 1, wherein said captured information is a driver's license number.

20. The method of claim 1, wherein said captured information is provided to said subscriber by a provider of said transaction processing device.

21. The method of claim 2, wherein said certifying authority provides independent verification of said subscriber based in part on said initial information.

22. The method of claim 1, further comprising the step of:

activating said transaction processing device for performing said network service upon successful verification of said subscriber.

23. The method of claim 1, further comprising the step of:

activating said subscriber account for providing said network service upon successful verification of said subscriber.

24. The method of claim 1, further comprising the step of:

activating said subscriber account for providing said network service upon successful verification of said subscriber and said transaction processing device.

25. The method of claim 23, wherein said activating step comprises the step of:
associating said subscriber account with said transaction processing device; and
enabling said subscriber account.

26. The method of claim 25, further comprising the step of:
transmitting data back to said transaction processing device.

27. The method of claim 26, wherein said transmitted data is configuration data.

28. The method of claim 1, wherein said network service is a payment processing service.

29. The method of claim 1, wherein said payment processing service includes credit card processing.

30. The method of claim 28, wherein said payment processing service is selected from the group consisting of debit card processing, check verification, check guarantee, payroll processing, gift certificate issuance, issuance of electronic tickets, and issuance of money order.

31. The method of claim 1, wherein said initial information is provided to a payment processor by said subscriber by entering information at a web site maintained by said payment processor.

32. The method of claim 31, wherein said information is entered by said subscriber via a wireless device.

33. The method of claim 1, wherein said transaction processing device is a standalone internet enabled transaction processing device.

34. The method of claim 1, wherein said transaction processing device is a standalone internet enabled wireless transaction processing device.

35. The method of claim 1, further comprising the step of:

providing by a provider of said subscriber account an identifying token to said subscriber separate from said transaction processing device.

36. The method of claim 35, wherein said identifying token is a username and a password.

37. The method of claim 35, wherein said identifying token is provided to said subscriber electronically in response to receiving said initial information from said subscriber.

38. The method of claim 35, wherein said identifying token is selected by said subscriber.

39. The method of claim 35, wherein said identifying token is selected by a provider of said subscriber account.

40. The method of claim 35, wherein said identifying token is encoded in a physical device provided to said subscriber by a provider of said subscriber account.

41. The method of claim 35, wherein said received captured information includes said identifying token that had been previously provided to said subscriber by said subscriber account provider.

42. A method for electronic authentication of a subscriber requesting a subscriber account for providing a network service, comprising the steps of:

providing a transaction processing device to said subscriber;

receiving initial information from said subscriber, wherein said initial information is received by a provider of said subscriber account;

storing said received information in a database associated with said provider of said subscriber account;

receiving captured information from said subscriber through said transaction processing device securely via a public network;

utilizing said captured information to receive verifying information about said subscriber;

comparing said verifying information with said initial information by said provider of said subscriber account to authenticate said subscriber; and

enabling said subscriber account for performing said network service.

43. The method of claim 42, wherein said transaction processing device is provided to said subscriber by mail.

44. The method of claim 42, wherein said subscriber purchases said transaction processing device from a retail location.

45. The method of claim 42, wherein said initial information is received from said subscriber through said transaction processing device.

46. The method of claim 42, wherein said transaction processing device is a point-of-sale electronic terminal.

47. The method of claim 42, wherein said provider of said subscriber account is a payment processor.

48. A method for electronic authentication of a subscriber requesting a subscriber account for providing a payment processing service, comprising the steps of:

receiving initial information from said subscriber, wherein said initial information is received by a payment processor;

storing said received information in a database associated with said payment processor;

providing a point of sale terminal to said subscriber;

receiving by said point of sale terminal identifying information from said subscriber, wherein said identifying information is captured by said transaction processing device, wherein at least a portion of said captured information is encrypted by said point of sale terminal;

receiving said encrypted information from said point of sale terminal via a public network;

decrypting said received encrypted information by said payment processor;

providing at least a portion of said decrypted information to a third party server;

receiving verifying information from said third party server wherein said verifying information is related to said decrypted information provided to said third party server;

comparing said verifying information with said initial information by said payment processor to authenticate said subscriber; and

activating said subscriber account for performing said payment processing service upon authentication of said subscriber.

49. The method of claim 48, wherein said point of sale terminal utilizes a private key unique to said point of sale terminal for said encryption of said captured information.

50. The method of claim 49, wherein said payment processor utilizes a public key of said point of sale terminal for said decryption of said received encrypted information.

51. A method for activating a subscriber account for providing a network service, comprising the steps of:

receiving an application from a subscriber for a subscriber account;

performing due diligence on said received application based in part on said received application;

providing a transaction processing device to said subscriber to provide said network service upon completion of said step of performing due diligence; and

electronically verifying that an individual activating said subscriber account via said transaction processing device is authorized to activate said subscriber account.

52. The method of claim 51, wherein said network service is a payment processing service.

53. The method of claim 51, wherein said transaction processing device is a point-of-sale terminal.

54. A method for activating a subscriber account for providing a network service, comprising the steps of:

providing a transaction processing device to a subscriber, wherein said subscriber provides a network service;

receiving an application from said subscriber for a subscriber acco\u0301unt;

receiving information from an individual through said transaction processing device to activate said subscriber account; and

electronically verifying that said individual activating said subscriber account is authorized to activate said subscriber account.

55. The method of claim 54, further comprising the step of:

performing due diligence on said received application based in part on said received application prior to receiving said information from said individual through said transaction processing device.

SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES

ABSTRACT OF THE DISCLOSURE

A system and method for electronically authenticating a subscriber account for a network service is disclosed. In the preferred embodiment, a subscriber account provider receives initial information from a subscriber. The received information is stored by the subscriber account provider. A transaction processing device is provided to the subscriber and the subscriber is electronically authenticated prior to enabling the subscriber account for performing the network service. In the preferred embodiment, the step of electronically authenticating the subscriber comprises receiving captured information from subscriber through said transaction processing device. After receiving the captured information the subscriber account provider utilizes the captured information to receive verifying information about the subscriber; and then compares the verifying information with the initial information to authenticate the subscriber.

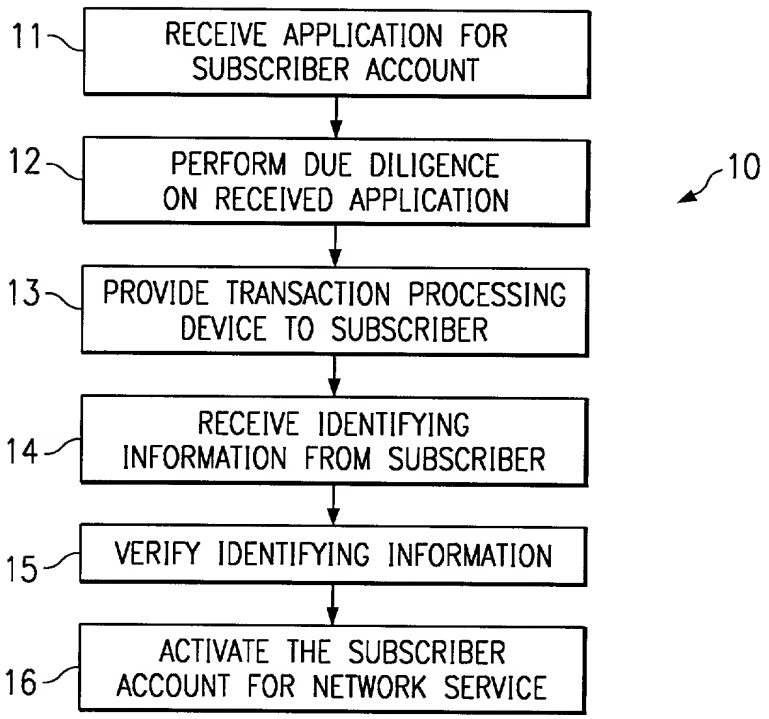

11
RECEIVE APPLICATION FOR SUBSCRIBER ACCOUNT
12
PERFORM DUE DILIGENCE ON RECEIVED APPLICATION
10
13
PROVIDE TRANSACTION PROCESSING DEVICE TO SUBSCRIBER
14
RECEIVE IDENTIFYING INFORMATION FROM SUBSCRIBER
15
VERIFY IDENTIFYING INFORMATION
16
ACTIVATE THE SUBSCRIBER ACCOUNT FOR NETWORK SERVICE

FIG. 1

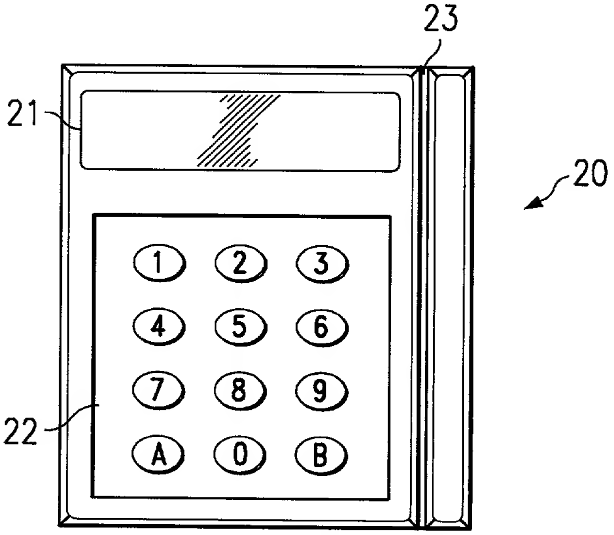

23
21
20
1
2
3
4
5
6
7
8
9
22
A
0
B

FIG. 2

FIG. 3

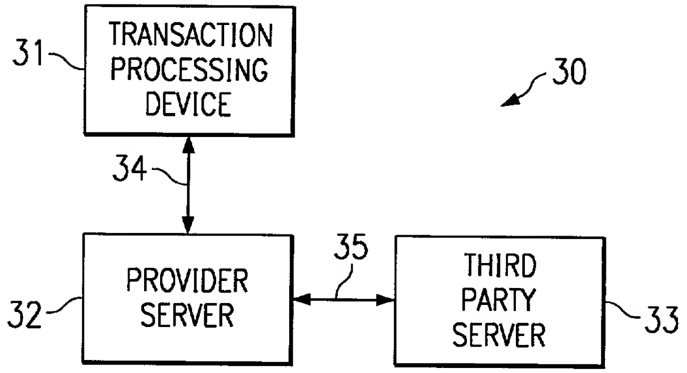


FIG. 4

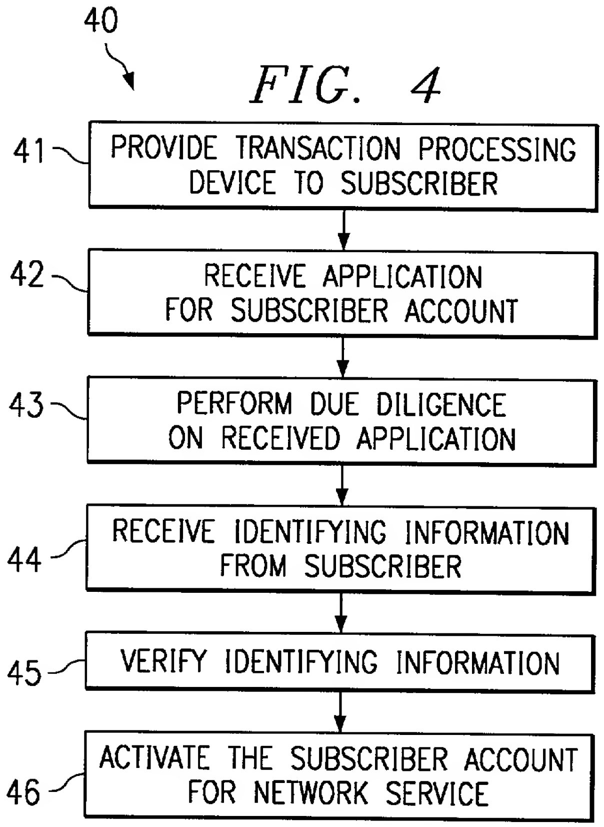
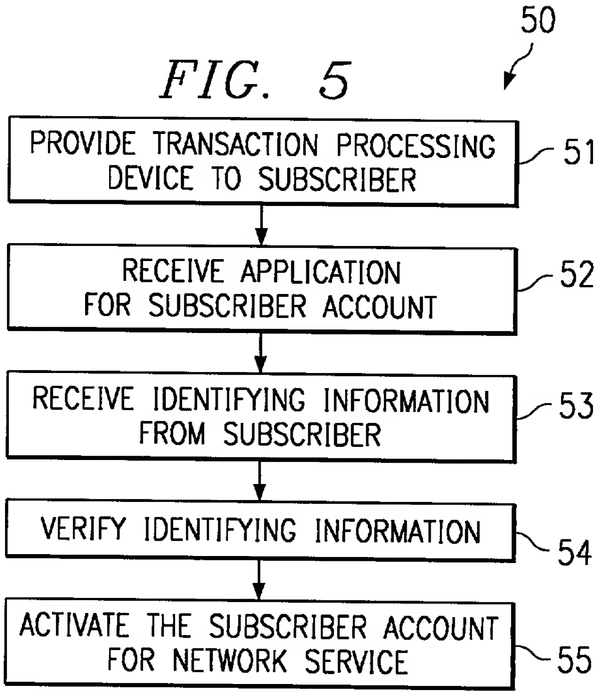

40
41
PROVIDE TRANSACTION PROCESSING DEVICE TO SUBSCRIBER
42
RECEIVE APPLICATION FOR SUBSCRIBER ACCOUNT
43
PERFORM DUE DILIGENCE ON RECEIVED APPLICATION
44
RECEIVE IDENTIFYING INFORMATION FROM SUBSCRIBER
45
VERIFY IDENTIFYING INFORMATION
46
ACTIVATE THE SUBSCRIBER ACCOUNT FOR NETWORK SERVICE

FIG. 5


50
PROVIDE TRANSACTION PROCESSING DEVICE TO SUBSCRIBER
51
RECEIVE APPLICATION FOR SUBSCRIBER ACCOUNT
52
RECEIVE IDENTIFYING INFORMATION FROM SUBSCRIBER
53
VERIFY IDENTIFYING INFORMATION
54
ACTIVATE THE SUBSCRIBER ACCOUNT FOR NETWORK SERVICE
55

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION, OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

☒ original.

□ design.

□ supplemental.

□ national stage of PCT.

□ divisional.

□ continuation.

□ continuation-in-part (C-I-P).

INVENTORSHIP IDENTIFICATION

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor *(if only one name is listed below)* or an original, first and joint inventor *(if plural names are listed below)* of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

SYSTEM AND METHOD FOR SECURE AUTHENTICATION OF A SUBSCRIBER OF NETWORK SERVICES

SPECIFICATION IDENTIFICATION

The specification of which:

(a) ☒ is attached hereto.

(b) □ was filed on ________________, as □ Serial No. 0 / ______________ or
□ ________________ and was amended on ____________________ *(if applicable)*.

(c) □ was described and claimed in PCT International Application No. ____________ filed on
__________________ and as amended under PCT Article 19 on ___________ *(if any)*.

SUPPLEMENTAL DECLARATION (37 CFR 1.67(b))

□ I hereby declare that the subject matter of the

□ attached amendment

□ amendment filed on ________________.

was part of my/our invention and was invented before the filing date of the original application, above identified, for such invention.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

□ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(d) ☒ no such applications have been filed.

(e) □ such applications have been filed as follows.

PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING DAY, MONTH, YEAR	PRIORITY CLAIMED UNDER 35 USC 119	
			[ ] Yes	[ ] No
			[ ] Yes	[ ] No
			[ ] Yes	[ ] No

CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(35 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER	**FILING DATE**
______/______________	__________
______/______________	__________
______/______________	__________

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S) UNDER 35 U.S.C. § 120

□ I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s) or § 365(b) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior U.S. or PCT international application in the manner provided by the first paragraph of Title 35, U.S.C. § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

APPLICATION SERIAL	FILING DATE	STATUS

ALL FOREIGN APPLICATION(S), *IF ANY,* FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

____

____

____

POWER OF ATTORNEY

I hereby appoint the following practitioner(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

David H. Tannenbaum, Reg. No. 24,745;
Michael A. Papalas, Reg. No. 40,381;
R. Ross Viguet, Reg. No. 42,203;
Michael J. Fogarty, III, Reg. No. 42,541;
Jody Bishop, Reg. No. 44,034; and
Thomas J. Meaney, Reg. No. 41,990.

SEND CORRESPONDENCE TO	DIRECT TELEPHONE CALLS TO:
David H. Tannenbaum FULBRIGHT & JAWORSKI L.L.P. 2200 Ross Avenue, Suite 2800 Dallas, Texas 75201.	David H. Tannenbaum (214) 855-8333

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other document.

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Inventor's signature : Mohammad Husain

Country of Citizenship: U.S.A. **Date:** 6/3/00

Residence: 19402 Flaxwood Dr., Humble, Texas 77346

Post Office Address: 19402 Flaxwood Dr., Humble, Texas 77346

Full name of second joint inventor, ~~if any~~: Manish Desai

Inventor's signature: Manish Desai

Country of Citizenship: India **Date:** 6/3/2000

Residence: 4731 Cairnsean St., Houston, Texas 77084

Post Office Address: 4731 Cairnsean St., Houston, Texas 77084